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Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.	Applicant(s)
09/181,244	Hoyt M. Layson, Jr.
Examiner	**Group Art Unit**
Van Trieu	2736

☒ Responsive to communication(s) filed on *Jun 6, 1999* .

☒ This action is **FINAL.**

☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire *3* month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

Disposition of Claims

☒ Claim(s) *1-18* is/are pending in the application.

Of the above, claim(s) _____ is/are withdrawn from consideration.

☐ Claim(s) _____ is/are allowed.

☒ Claim(s) *1, 3-12, and 14-18* is/are rejected.

☒ Claim(s) *2 and 13* is/are objected to.

☐ Claims _____ are subject to restriction or election requirement.

Application Papers

☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

☐ The proposed drawing correction, filed on _____ is ☐approved ☐disapproved.

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☐ All ☐ Some* ☐ None of the CERTIFIED copies of the priority documents have been

☐ received.

☐ received in Application No. (Series Code/Serial Number) _____ .

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____ .

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

☒ Notice of References Cited, PTO-892

☐ Information Disclosure Statement(s), PTO-1449, Paper No(s). _____

☐ Interview Summary, PTO-413

☐ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

--- SEE OFFICE ACTION ON THE FOLLOWING PAGES ---

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 2 recites the limitation "the current location" in line 3. There is insufficient antecedent basis for this limitation in the claim.

Claim 13 recites the limitation "the current location" in line 3. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1, 3-5, 7, 8, 10-12, 14 and 16-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Hoffman et al** [US 5,742,233] in view of **Krasner** [US 5,825,327].

Hoffman et al disclose all the subject matters as follows:

Regarding claim 1, the claimed tamper resistant body-worn tracking device worn on a limb of an offender for use in a wireless communication system receiving signals from a GPS and directly communicating spacial coordinates to a multiple remote sites (a small portable signaling unit 20 is attached to a tracking person by GPS network 60, cellular telephone system 80 and a central dispatch station 80 which has one or more dispatch operators 82, one or more data modems 86 and one or more display consoles 92, wherein the dispatch operator notifies the designated person such as parent, guardian, police or fire department, Fig. 1, col. 7, lines 51-57, col. 8, lines 1-17 and 13, lines 40-42); and the sealed enclosed case containing means (a small portable signaling unit 20 having water proof, Figs. 1-3, col. 5, lines 49-60, col. 6, lines 38-40, col. 8, lines 31-67 and col. 14, lines 8-10); and the main battery (rechargeable battery 120 and lithium battery 48, Figs. 3B and 5, col. 8, lines 61-63 and col. 9, lines 53-57); and the signaling device enclosed by the case (received GPS signals and alarm signals, Figs. 4 and 5); and means to replace the main battery (lithium battery 48, Fig. 3B); and circuit board enclosed by the case having attached on the circuit board, a wireless data modem and a GPS receiver (data modem 112 and GPS receiver 100, Fig. 2 and 5, col. 9, lines 43-45 and 53-54); but **Hoffman et al** do not disclose the receiver having a means to acquire updates to a GPS almanac. However, **Hoffman et al** teach that the portable signaling unit 20 includes a GPS antenna 30, a GPS receiver 100 and a position buffer

circuit 102 for receiving signals from GPS 60 to indicate its current position which is transmitted to a central dispatch station 80 for tracking an individual carried that signaling unit 20, Figs. 1 and 5, abstract, col. 4, lines 9-12, col. 6, lines 50-57. **Krasner** teaches that a GPS receiver 201 receives position signals from GPS via the Almanac of the GPS constellation. Upon receiving a GPS command indicating that a position determination should occur, the GPS receiver 201 with a digital processor 207 goes into the phase 401 in which it collects GPS signals from three GPS antennas in phases 404, 405 and 406 respectively. Then, after the collection is complete, the GPS receiver 201 enters phase 403 in which it is no longer actively acquiring, Figs. 2A, 6A and 8, col. 11, lines 57-67, col. 12, lines 1-41 and col. 18, lines 1-52. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to substitute the GPS receiver with almanac GPS constellation of **Krasner** for the GPS receiver of **Hoffman et al** in order to save the battery power whenever the location/position of the monitoring individual is not required.

Hoffman et al also do not disclose matched filtering GPS receiver. However, **Hoffman et al** teach that the signaling unit 20 includes a GPS receiver for receiving GPS signals which are send to the position buffer circuit 102 and microcontroller 106, Fig. 5, col. 9, lines 43-47. **Krasner** teaches that a GPS receiver includes a matched filtering operation, Fig. 8, col. 14, lines 66-67, col. 15 and col. 16, lines 1-63. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to substitute the matched filtering operation of **Krasner** to the position buffer of GPS receiver of **Hoffman et al** in order to provide a higher

accuracy location/position of the tracking person having that GPS receiver unit, and it provides improved performance relative to continuous tracking GPS receivers in situations such as urban blockage conditions. Since the GPS satellites are orbiting, they are moving as viewed from the GPS receiver, their position relatively to the GPS receiver and the instant in time when the GPS receiver is searching for a satellite.

Hoffman et al also do not disclose the RF front end connected to the GPS receiver and matched filtering GPS receiver and a field programmable gate array "FPGA". However, according to the discussions of the substitution of the GPS receiver having a matched filtering operation of **Krasner** for the GPS receiver of **Hoffman et al** above, wherein the GPS receiver includes a FPGA 209 connected between the digital snapshot memory 205b and a general purpose programmable DPS chip 207 for control the addressing of the digital snapshot memory and for sending a wake up signal to the DSP, in order to performing a positioning operation, Figs. 2A, 3 and 6A, col. 10, lines 5-64, col. 11, lines 14-56, col. 14, lines 1-67 and col. 15, lines 1-24.

Regarding claim 3, the claimed battery monitoring circuit (low battery sensor 122, Fig. 5).

Regarding claim 4, **Hoffman et al** do not disclose means for implementing tamper detection are battery cover screws that actuate an alarm to a central data base if removed from contact with the case. However, **Hoffman et al** teach that a portable signaling unit 20 is operated by a rechargeable battery and can be manufactured in various configurations that could incorporate a

sensor to detect if the portable signaling unit 20 was involuntarily removed from the individual and would automatically trigger an alarm signal to the central dispatch station 80, col. 8, lines 31-50.. Therefore, it would have been obvious to one of ordinary skill in the art to recognize that it is a designed or manufactured choice to have the sensor for sensing the removal of the rechargeable battery or removal of the portable signaling unit because by unauthorized to remove either one will trigger an alarm signal to the central dispatch station for alerting of the tampering conditions, such as forceful or unauthorized removal of the remote alarm switch from the individual automatically generates an urgent alarm signal, col. 6, lines 29-33.

Regarding claim 5, **Hoffman et al** do not explicitly disclose the means for implementing tamper detection ins a strap attached to the case and worn around an ankle of the offender which if severed actuates an alarm to a central data base. However, **Hoffman et al** teach that a small portable signaling unit 20 can be manufactured in various configurations for attaching it securely to the individual 50, including by use of a belt, belt clip, or carry strap as shown in Figure 1, col. 8, lines 43-50. Therefore, it would have been obvious to one of ordinary skill in the art to recognize that it is a design or user choice to have the signaling unit attached to arm, leg or other portion of the monitored individual that prevents it from tampering or loosing.

Regarding claim 7, **Hoffman et al** do not disclose the FPGA includes processor and memory containing a schedule of rules and location constraints. However, according to the discussions of

the substitution of the GPS receiver of **Krasner** for the GPS receiver of **Hoffman et al** above, in which, the GPS receiver includes a FPGA connected between the digital snapshot memory 205b and a general purpose programmable DPS chip 207 for control the addressing of the digital snapshot memory and for sending a wake up signal to the DSP, in order to performing a positioning operation.

Regarding claim 8, all the claimed subject matters are discussed in claim 1 above, and the supervisory agency and law enforcement (central dispatch station for dispatching an emergency situation to the police, paramedics and fire department, col. 1, lines 13-23 and col. 8, lines 12-25).

Regarding claim 10, the claimed wireless data modem to actively transmit the location of the body-worn device at current health and status frequency intervals (the portable signaling unit 20 including a data modem 112 is worn by an individual 50 being monitored. The portable signal unit 20 transmits signals to the central patching station 80 at a predetermined intervals to alert emergency personnel of a health trauma of monitored person, Fig. 5, col. 5, lines 28-35, col. 6, lines 25-28 and col. 13, lines 34-36).

Regarding claim 11, the claimed wireless data modem to actively transmit the accumulated location movement history of the body-worn device at predetermined intervals (the portable signaling unit 20 including a data modem 112 is worn by an individual 50 being monitored. The

portable signal unit 20 transmits signals from data modem 112 to the central patching station 80 at a predetermined intervals until the connection is terminated by a dispatch operator 82, wherein the data modem signals contains accumulations of the GPS signals indicating of the movement of monitored person. The central dispatch station 80 includes data modems 86 and a computer system 90 for mapping display information received from the portable signaling unit 20, storing and retrieving historical data, Fig. 5, col. 5, lines 28-35, col. 8, lines 12-30 and col. 13, lines 34-36).

Regarding claim 12, all the claimed subject matters are discussed in claim 1 above.

Regarding claim 14, the claimed dynamic rule violation has occurred (col. 4, lines 46-56 and col. 6, lines 24-33).

Regarding claim 16, the claimed additional attached a battery monitoring circuit (low battery sensor 122, Fig. 5).

Regarding claim 17, the claimed FPGA comprising multiple integrate circuits for power saving is met by the discussions between **Hoffman et al** and **Krasner** in claim 1 above.

Regarding claim 18, the claimed passive tracking mode for reduced wireless communications and power savings is met by the FPGA for wake up the DSP to provide power to other circuits in order to save and reduce power consumption, as discussed between **Hoffman et al** and **Krasner** in claim 1 above.

4. Claims 6 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Hoffman et al** and **Krasner** as applied to claim 1 above, and further in view of **Revell et al** [US 5,838,237] . **Hoffman et al** disclose all the subject matters as follows:

Regarding claims 6 and 15, the claimed signaling device is a low profile vibrator. However, **Hoffman et al** teach that a portable signaling unit 20 includes a GPS receiver 100, a cellular telephone antenna 26 and a speaker microphone element 32 gives the central dispatch operator 82 the option to conduct two-way voice communications with the individual in distress. The unit 20 is also configured with a small LCD display screen for hearing impaired to receive message from the central dispatch station, Figs. 1, 2 and 5, col. 8, lines 31-41, col. 9, lines 39-53 and col. 14, lines 11-14. **Revell et al** teach that a self contained personal alarm device 10 is capable of signaling its location to a remote site such as security station 62. The device 10 includes a cellular transceiver 304 for receiving GPS signals and a 202 and a vibrator 310 for assuring the user that the device 10 has transmitted an emergency message, Figs. 1, 3 and 4, abstract, col. 5, lines 22-30 and col. 6, lines 40-44. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to substitute the vibrator of **Revell et al** for the LCD display t

of **Hoffman et al** and **Krasner** so that the monitored person/individual assures of sending an alarm signal to the remote location for help. Thus, it provides a higher reliability of the portable personal alarm system, to minimize of the incident and to save life.

5. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over **Hoffman et al** and **Krasner** [734] as applied to claim 1 above, and further in view of **Krasner** [US 5,825,327]. **Hoffman et al** disclose all the subject matters as follows:

Regarding claim 9, **Hoffman et al** do not disclose the backup battery to provide power to the circuit board if the main battery is discharged or during replacement. However, **Hoffman et al** teach that a portable signaling unit 20 includes a chargeable battery to be charged by a drop-in batter charger 36, Figs. 2 and 5, col. 8, lines 31-43. **Krasner** [327] teaches that a GPS mobile unit includes a power regulators 77 which is coupled to receive power from batteries 81 as well as an optional solar cells 79 which provides power to the GPS mobile unit in addition to recharging the batteries 81, Fig. 1C, col. 9, lines 25-37. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to substitute the solar cells of **Krasner** [327] for the battery charger of **Hoffman et al** and **Krasner** [734] in order to provide dual functions of recharging the battery and to backup power to the portable signal unit when the chargeable battery is discharged.

Response to Arguments

6. Applicant's arguments filed on July 06, 1999 have been fully considered but they are not persuasive. Because,

Applicant's arguments:

(A) **Hoffman et al** is not designed for use on the limb of an offender which needs to continuously send signals to a central database system.

(B) **Hoffman et al** do not disclose a matched filtering GPS receiver with an RF front end connected to the GPS receiver.

(C) **Hoffman et al** has no means to acquire updates to a GPS almanac.

(D) **Hoffman et al** and **Krasner** have no suggestion for using a low profile vibrator.

Response to the Arguments:

(A) **Hoffman et al** teach that a small portable signaling unit can be manufactured in various configurations for attaching it securely to the individual including by use of a belt, belt clip, or carry strap as shown in Figure 1. Therefore, it would have been obvious to one of ordinary skill in the art to recognize that it is a design or user choice to have the signaling unit attached to arm, leg, limb or other portion of the monitored individual that prevents it from tampering or loosing.

(B) Examiner agrees that **Hoffman et al** do not disclose a matched filtering GPS receiver with an RF front end connected to the GPS receiver. However, **Hoffman et al** teach that the signaling unit includes a GPS receiver for receiving GPS signals which are send to the position

buffer circuit and to a microcontroller for processing the GPS signals to indicating the actual position of the signaling unit. **Krasner** teaches that a GPS receiver includes a GPS antenna connected to a RF to IF converter and to FPGA connected between the digital snapshot memory and communicate with a general purpose programmable DPS chip for processing the GPS signals with a matched filtering operation and the addressing of the digital snapshot memory and for sending a wake up signal to the DSP, in order to performing a positioning operation. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to substitute the matched filtering operation of **Krasner** to the position buffer of GPS receiver of **Hoffman et al** in order to provide a higher accuracy location/position of the tracking person having that GPS receiver unit, and it provides improved performance relative to continuous tracking GPS receivers in situations such as urban blockage conditions. Since the GPS satellites are orbiting, they are moving as viewed from the GPS receiver, their position relatively to the GPS receiver and the instant in time when the GPS receiver is searching for a satellite.

(C) Examiner agrees that **Hoffman et al** has no means to acquire updates to a GPS almanac. However, **Hoffman et al** teach that the portable signaling unit includes a GPS antenna, a GPS receiver and a position buffer circuit for receiving signals from GPS satellites to determine its current position which is transmitted to a central dispatch station for tracking an individual carried that signaling unit as acquired by a tampering action on the portable signaling unit or by a distress person. **Krasner** teaches that a GPS receiver receives position signals from GPS satellite via the Almanac of the GPS constellation. Upon receiving a GPS command indicating that a position

determination should occur, the GPS receiver collects all the GPS signals, and after the collection is complete, the GPS receiver is no longer actively acquiring. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to substitute the GPS receiver with almanac GPS constellation of **Krasner** for the GPS receiver of **Hoffman et al** in order to save the battery power whenever the location/position of the monitoring individual is not required.

(D) Examiner agrees that **Hoffman et al** and **Krasner** have no suggestion for using a low profile vibrator. However, **Hoffman et al** teach that a portable signaling unit has manual push button switches for activating an alarm related to individual's health conditions or threat to the individual. The unit is also configured with a small LCD display screen for hearing impaired to receive message from the central dispatch station. **Revell et al** teach that a self contained personal alarm device is capable of signaling its location to a remote site such as security station. The device includes a cellular transceiver for receiving GPS signals and a vibrator 310 for assuring the user that the device has transmitted an emergency message. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to substitute the vibrator of **Revell et al** for the LCD display of **Hoffman et al** in order to alert the monitored person/individual that the transmission is successful to transmit the alarm signal and position signal to the remote location for help, because such vibration alert is very useful in the wireless communications such as pager or cellular telephone or other electronic devices for alerting the user of a specific condition being detected or monitored.

Conclusion

7. Claims 2 and 13 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action.

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Neher discloses a global position and tracking system for locating one of a person. The system comprises at wrist wear device having a GPS receiver and a processing device for determining a location of the wrist wear device and then to transmit the position signal to a central monitoring system. [US 5,905,461]

Taylor, Jr. discloses a portable monitoring device for each monitored person which secures to a leg of monitored person. The monitoring device comprises a GPS receiver for receiving signals from GPS satellites, to determine its position and to transmit position data to a central station. The central station includes comparison means, immediate comparison and historic comparison which determine if the monitored person was within a define area during a defined period of time that a crime have been committed. [US 5,867,103]

Lepkfler discloses an interactive individual location and monitoring system includes a central monitoring system for maintain health, location and other data with respect to an individual. A belt worn pod unit carried by the individual includes a GPS receiver and a transceiver for communicating with the central monitoring system. A watch unit broadcasts the medical and

other information locally by radio and to receive the alerts and queries by a vibratory annunciator. [US 5,652,570]

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to examiner **Van Trieu** whose telephone number is (703) 308-5220. The examiner can normally be reached on Mon-Fri from 7:00 am to 4:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. **Jeffery Hofsass**, can be reached on (703) 305-4717. The office facsimile number is (703) 308-6743.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703)305-4750, Mon-Fri, 8:30 am to 5:00 pm.

JEFFERY A. HOFSASS
SUPERVISORY PATENT EXAMINER
GROUP 2700

Examiner: Van Trieu

Date: July 23, 1999